PATENT ABSTRACTS OF JAPAN

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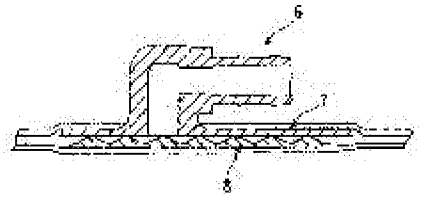
(54) **AIR MASSAGE MACHINE**

(57)Abstract:
PROBLEM TO BE SOLVED: To offer an air massage machine having a structure of preventing inspiration or exhaustion from pumps from becoming difficult by close adhesion of the inspiration and exhaustion section of an air valve to an air bag material facing each other.
SOLUTION: In the air massage machine in which inspiration and exhaustion of the air bag is carried out with the air valve, an irregularity form is prepared in the air bag material opposite to the inspiration and exhaustion section of the air valve. Further, the irregularity form is formed by welding a material having irregularity to the air bag material or forms the irregularity in the air bag material itself.



CLAIMS

[Claim(s)]

[Claim 1]

In an exhaust air massaging machine to which pumping of the air bag is carried out with an inflation valve,

An exhaust air massaging machine providing uneven shape in a pumping part of the

above-mentioned inflation valve, and an air bag material which counters.
[Claim 2]
Said exhaust air massaging machine according to claim 1, wherein said uneven shape welded and forms a raw material which has unevenness in an air bag material.
[Claim 3]
Said exhaust air massaging machine according to claim 1, wherein said uneven shape forms unevenness in the air bag material itself.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]
This invention relates to the structure of the pumping part especially about the exhaust air massaging machine which carries out expansion shrinkage deforming with the application-of-pressure air supplied from an external air supply pumping plant.
[0002]
[Description of the Prior Art]
It is considered as the exhaust air massaging machine to which pumping of the air bag is carried out by the former, for example, an inflation valve, and the thing of JP,2001-157700,A, the exhaust air massaging machine for arms (application for patent No. 131046 [2002 to]), etc. are proposed by the same applicant.
[0003]
In the exhaust air massaging machine which carries out expansion shrinkage deforming with the application-of-pressure air supplied from the air supply pumping plant of such the exterior, It sticks with the air bag material in which the pumping part of an inflation valve faces each other at the time of exhaust air, a pumping part is closed, the circulation way of air is lost, and it arises well that the inhalation of air or exhaust air from a pump becomes difficult.
[0004]
As what improves this, JP,10-201804,A is publicly known. Hereafter, the outline of above-mentioned JP,10-201804,A is explained using drawing 5.
The splicer 40 of the above-mentioned conventional example comprises the disc-like flange 44 provided in the base of the L character-like communication trunk 41 with which the terminal area 42 by which an air hose is connected to the tip side was formed, and this communication trunk 41 while the breakthrough 43 is formed in an inside, as

shown in drawing 5. As the numerals 45 show to said flange 44, the opening of the breakthrough 43 of said communication trunk 41 is carried out. And the field by the side of said communication trunk 41 of said flange 44 is the attachment side 44a, and this attachment side and the field of the opposite hand are the non-attaching field 44b, and these attachment side 44a and the non-attaching field 44b are formed in the flat face.
[0005]
And by pasting up said attachment side 44a on the medial surface of said sheet member 31 by adhesion etc., while inserting the base of said communication trunk 41 in the breakthrough 31a formed in said sheet member 31, It is attached in the sheet member 31, i.e., said approximately center part of the air bag 11a, in airtight.
[0006]
While forming two or more heights 44c in the non-attaching field 44b of said flange 44, making the circumference of said opening 45 dotted with these heights 44c and being formed, The field projected to the field 44 of a direction, i.e., the flange of the terminal area 42, which said terminal area 42 has projected, and the adjacent spaces of this field are made radiately dotted with the center O of the opening 45 as a center, and it is formed in them.
[0007]
And since said heights 44c were formed in the non-attaching field 44b of said flange 44, even if the air bag 11a will contract and it will be in a flat state, The non-attaching field 44b of said flange 44 is not stuck with the sheet member 32, that is, the gap G of only the abbreviated height measurement of the heights 44c is formed. Therefore, also in the case where the air bag 11a contracts said opening 45, and it has become a flat state, It is not blockaded by the sealed state by the sheet member 32, and when always [11a], i.e., an air bag, contracts to the periphery of the opening 45 and it is in a flat state, said gap G will be formed. for this reason -- if supply of air is started by said air feeding means which is not illustrated -- this air -- a supply start -- simultaneously -- getting it blocked and passing the gap G immediately -- the inside of the air bag 11a -- ** -- ****** -- things are made. Therefore, without passing through the process in which make the flange and sheet member which have been mutually stuck like before at the time of the start of supply of air estrange with the pressure of air, and a gap is formed, Air can supply that is, flow in the air bag 11a, and an inflow into the air bag 11a of air is made smoothly.
[0008]
However, the structure of providing the rib for air current passes in the above-mentioned plug side has the following faults.

(1) The structure of a rib is complicated, when making the whole plug into integral moulding, a metallic mold becomes complicated and a manufacturing cost becomes high.
(2) The formation point of a rib is restricted within the limits of a plug, and it cannot respond to the blockade by adhesion of the sheet in the part which shifted from the plug to the method of outside for a while.
[0009]
[Problem(s) to be Solved by the Invention]
Especially in this exhaust air massaging machine about the exhaust air massaging machine which carries out expansion shrinkage deforming of this invention with the application-of-pressure air supplied from an external air supply pumping plant, The pumping part of an inflation valve sticks with the air bag material which faces each other, and aims at providing the structure of preventing the inhalation of air or exhaust air from a pump from becoming difficult.
[0010]
[Means for Solving the Problem]
In an exhaust air massaging machine to which this invention carries out pumping of the air bag with an inflation valve to achieve the above objects,
Uneven shape was provided in a pumping part of the above-mentioned inflation valve, and an air bag material which counters.
[0011]
Said uneven shape's having welded and formed a raw material which has unevenness in an air bag material, or said uneven shape forms unevenness in the air bag material itself.
[0012]
[Embodiment of the Invention]
Hereafter, this invention is explained in full detail based on the embodiment shown in drawing 1 - drawing 4.
The exterior side figure of the air bag of the exhaust air massaging machine [in / in drawing 1 / an embodiment of the invention] for arms, The cross-sectional view to which, as for the sectional view of the raw material of the massage bag which counters the plug contacting part of the exhaust air massaging machine which shows drawing 1 drawing 2, and drawing 3, the plug contacting part of drawing 1 was expanded, and drawing 4 show the cross-sectional view to which other same examples of the plug contacting part of drawing 1 were expanded.
[0013]

Although this invention is used for the pumping mouths 50-53 of the air bag of the exhaust air massaging machine of a leg, or the exhaust air massaging machine for arms of drawing 7 as shown in drawing 6, it may be used for the pumping mouth of the air mat type massaging machine like said JP,10-201804,A statement. the plug contacting part structure of this invention has a remarkable effect, when receipts and payments of exhaust air use for a frequent exhaust air massaging machine, but when sensing difficulty for pumping, it can be applied to other things which use air bags, such as the usual air mat and a rubber ring.

[0014]

These exhaust air massaging machine has an air bag (air-bag object) which are expansion and carrying out shrinkage deforming and presses a hand and a leg with the air which is supplied by the supply and exhaust control of the air supply pumping plant of the exterior which is not illustrated, and by which pressurization-and-decompression control is carried out.

[0015]

54 in drawing 7 is a projection for operation assistance used for switching on and switching off the air supply pumping plant formed in the central part with few shape changes by the air supply and exhaust of the air in the lateral surface by the side of the back of the hand of a hand part air-bag soma. Even if it will be in the state where a hand's freedom is not effective, by this after equipping with the exhaust air massaging machine for arms, Operation of pushing various kinds of switches which formed the projection 54 there towards the navigational panel provided in the air supply pumping plant can be performed, and equip [with the exhaust air massaging machine 1 for arms], it enables it to operate an air supply pumping plant easily. In the hand part air bag of drawing 7, an inflation valve is arranged in the center, and it is the projection 54 for the above-mentioned operation assistance.

It has ****** in and.

[0016]

What was formed in cloth, such as vinyl chloride and polyurethane, respectively in order for the above-mentioned air bag (air-bag object) to be cloth of nylon etc. in the raw material which can be crooked, expanded and contracted freely, for example, the outside, and to give airtightness for the inside is used. And the edge part of outer cloth and inner cloth is welded mutually, adhesion processing is carried out, and it is formed as an air chamber which can hold airtightness so that application-of-pressure air may not be revealed outside, even if application-of-pressure air is introduced.

[0017]

After finishing equipping with an exhaust air massaging machine, application-of-pressure air is supplied from each air supply and exhaust opening 50 - 53 grades. The hose which carries out the feeding and discarding of the application-of-pressure air from an air supply pumping plant is attached to the air supply and exhaust opening 50 - 53 grades, enabling free desorption. The application-of-pressure air by which a pressure, feeding-and-discarding timing, etc. were controlled from the air supply pumping plant is supplied to each air supply and exhaust opening by this, and an air-bag object carries out expansion and shrinkage deforming individually.

[0018]

In this way, when application-of-pressure air is supplied from an air supply pumping plant, an air-bag object expands to ring shape etc., and presses an arm and a foot from the circumference.

Drawing 1 is the plan which extended the air bag portion 55 in drawing 6 to flat shape, for example. Drawing 2 is a cross-sectional view showing the concavo-convex example provided in the inner surface of the above-mentioned air bag which counters the plug 2 for pumping. Drawing 3 and drawing 4 show the cross-sectional view of the A-A' portion in drawing 1.

[0019]

Since pumping is possible from the crevice between the above-mentioned uneven parts even if the above-mentioned air-bag inner surface sticks to a pumping mouth exactly at the time of exhaust air, since the unevenness 4 and 8 is formed in the air-bag inner surface which a pumping plug counters as shown in drawing 3 and drawing 4

The situation where pumping becomes easy, air current passes are blockaded and pumping becomes difficult is avoidable.

[0020]

Since this unevenness is formed in the direction of a bag material and it can use the thing of a general-purpose simple structure for the structure of a pumping plug, it does not have necessities, such as newly making a metallic mold, and can perform saving in respect of a manufacturing cost. The membranogen material which unevenness of the bag material could weld and form in flat membranogen material the concavo-convex raw material created separately, or formed unevenness in the film itself may be selectively used for the whole surface. Or the above-mentioned unevenness may form unevenness in flatness-like membranogen material with heat pressing etc.

[0021]

By forming the above-mentioned unevenness in the direction of membranogen material, the portion in which unevenness exists is not restricted by the plug portion, but it can

form in other portions by which air current passes may be blockaded. The above-mentioned unevenness can be formed also in the portion which the longitudinal direction of a rectangular air bag or the membranogen material of a crooked part tends to stick, for example by this. The prominent effect that prevention from a blockade in parts unrealizable in said conventional example other than a pumping plug contacting part can also be performed by this arises.

[0022]

[Effect of the Invention]

As explained above, this invention has realized avoiding the state of obstruction in pumping by the structure where a manufacturing cost is cheap by having provided uneven shape in the pumping part of an inflation valve, and the air bag material which counters. This structure has not only the neighborhood of a pumping mouth but the high effect of being able to form in the inner one and avoiding the above-mentioned state of obstruction conventionally.

[Brief Description of the Drawings]

[Drawing 1]It is an exterior side figure of the air bag of the exhaust air massaging machine for arms in an embodiment of the invention.

[Drawing 2]It is a sectional view of the raw material of the massage bag which counters the plug contacting part of the exhaust air massaging machine shown in drawing 1.

[Drawing 3]It is the cross-sectional view to which the plug contacting part of drawing 1 was expanded.

[Drawing 4]It is the cross-sectional view to which other same examples of the plug contacting part of drawing 1 were expanded.

[Drawing 5]It is a figure showing the structure of a pumping mouth of preventing the conventional blockade.

[Drawing 6]It is a figure showing the example of the exhaust air massaging machine for legs with which this invention is applied.

[Drawing 7]It is a figure showing the example of the exhaust air massaging machine for arms with which this invention is applied.

[Description of Notations]

1 Air bag

2 Pumping mouth

3 A concavo-convex formation part

4 Uneven part

5 Air-bag raw material

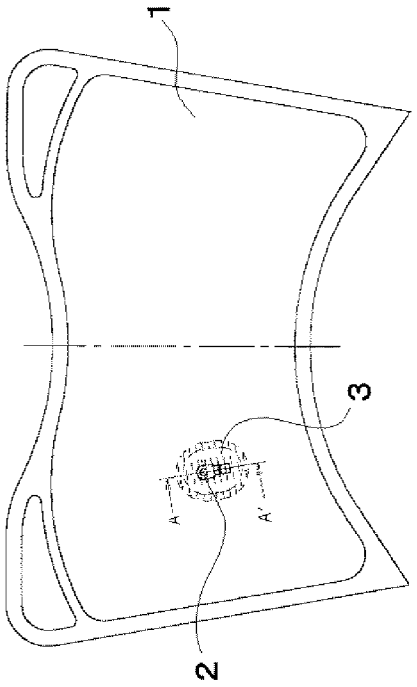
6 Pumping mouth

7 Pumping plug adherence part

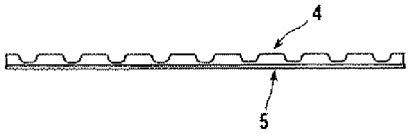
8 A concavo-convex formation part

DRAWINGS

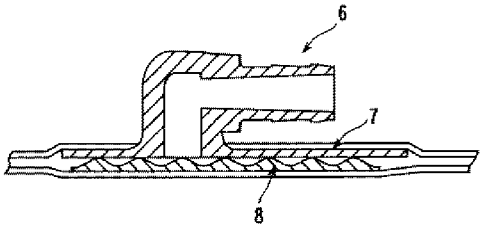
[Drawing 1]



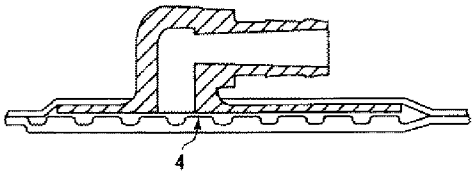
[Drawing 2]



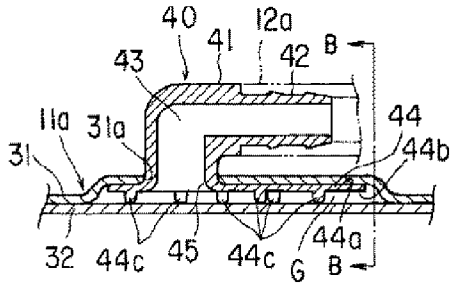
[Drawing 3]



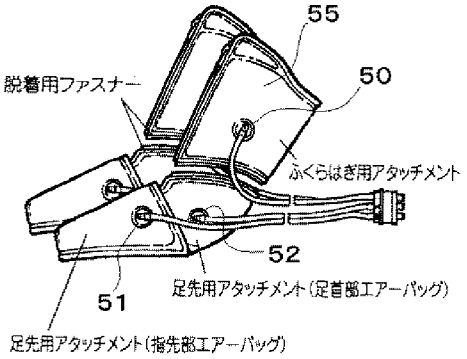
[Drawing 4]



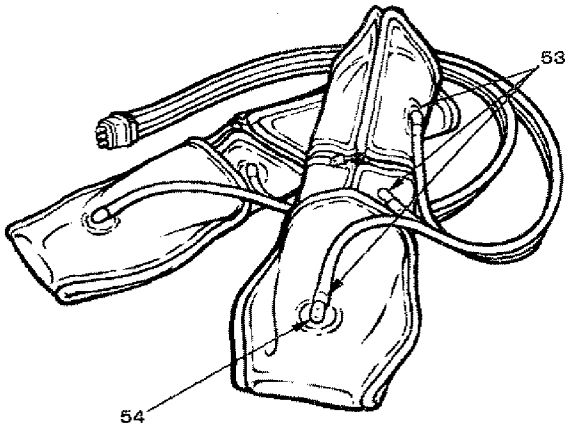
[Drawing 5]



[Drawing 6]



[Drawing 7]



[Translation done.]

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1. Filing info(Application number,Filing date)
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3. Detailed info of application
   * Kind of examiner's decision
   * Kind of final decision
   * Date of final decision in examination stage
4. Date of request for examination
5. Date of sending the examiner's decision of rejection(Date of sending the examiner's decision of rejection)
6. Appeal/trial info
   * Appeal/trial number,Date of demand for appeal/trial
   * Result of final decision in appeal/trial stage,Date of final decision in appeal/trial stage
7. Registration info
   * Patent number,Registration Date
   * Date of extinction of right
8. Renewal date of legal status

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